Remarks

The present amendment is responsive to the Office Action mailed in the above-referenced case on December 09, 2002, made final. Claims 1-23 are presented for examination. Claims 1-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Lakshman et al. (ACM 1-58113-003), hereinafter Lakshman.

Applicant has carefully reviewed the prior art of Lakshman, and the Examiner's rejections and statements. Applicant herein amends the independent claims to more particularly point out the subject matter regarded as the invention, and to establish that the claims distinguish unarguably over the prior art presented.

The present Office Letter imposes a final rejection wherein the Examiner presents the same rejections and statements. The Examiner has kindly provided an extensive "Response to Arguments" portion of the Office Letter assiduously reflecting applicant's arguments and provides a response to each. This is very much appreciated. Applicant herein rebuts the Examiners responses as required to overcome the rejection.

In the rejection of claim 1 the Examiner states Lakshman numbers intervals between break points in sequential binary numbers (as the applicant clearly claims), associates a subset of the first set of rules as applicable in each interval between break points on each axis, then considers a packet as a point in the N-dimensional space according to its header field values, locates the binary numbered interval into which the point projects on each axis by performing a search on each axis for the numbered interval into which the point projects on that axis, thereby determining rules applicable to the packet for that axis, and then determines the specific rules applicable to the packet from the subsets of rules by

selecting those rules as applicable to the packet that apply to the packet on all of the N axes. The Examiner further notes that a set of break points constitutes an interval.

Applicant herein amends claim 1 to particularly point out that the intervals in applicant's invention are arbitrarily numbered in ascending sequential order. In the response to arguments portion of the current Office Letter the Examiner states that Lakshman's Fig. 2 shows breakpoints that are numbered as in applicant's claim.

Applicant respectfully traverses the Examiner's statement. Applicant argues that Lakshman's Fig. 2 clearly fails to show numbering breakpoints representing marking the beginning and ending value on each axis for each rule. As seen in Fig. 2 of Lakshman the dotted lines extending to the x and y axis from the rectangular objects are not numbered. For example, X1 including binary number 1000, represents intervals, not breakpoints as claimed.

Applicant's invention when applying the pre-processing phase must number breakpoints. Said numbering enables a more efficient method for isolating intervals. Referring to applicant's Fig. 3, consider, for example, a first step on the X-axis using the break point 1C. A compare will show that the point 05 lies to the left of 1C, eliminating the interval from 1C to 1F. One may then select any one of the break points between 01 and 1C , and continue to process, eventually isolating the correct interval. Another possibility, again with reference to applicant's Fig. 3, is to select break points considering the binary value of the break points, at a point that where the most significant bit of the X-value changes. In the example shown in applicant's Fig. 3, 0E is 01110 and 17 is 10111. In this scheme one would select 17 as the first break point, and the search continues by selecting break

points on the axes were the second bit changes, the third bit changes, and so on the fifth bit.

Applicant argues that incorporating the numbering of breakpoints and using the numbered breakpoints as explained above in isolating intervals provides a more efficient and expedient search algorithm. Applicant believes this is a patentable advantage over the art of Lakshman. Although Lakshman states, "using any other efficient search algorithm", this statement cannot anticipate or suggest applicant's method of numbering breakpoints because Lakshman does not disclose numbering breakpoints.

The Examiner states that the concept of "naming" intervals is not found in the specification. Applicant acknowledges that the intervals are not "named" in a broad sense, they are actually "numbered". Applicant herein amends the independent claims to recite that the intervals are arbitrarily numbered in ascending order. Page 12 of applicant's specification clearly discloses the arbitrary numbering of intervals between breakpoints. Applicant's invention as claimed clearly discloses numbering the breakpoints *and* the intervals formed between them.

Upon careful and thorough review of Lakshman, particularly the portions cited and applied by the Examiner to support the Examiner's rejections of applicant's claims, applicant is confident that nowhere in a reference of Lakshman is there any disclosure, suggestion or intimation of anything having to do with numbering intervals and break points, wherein the intervals are arbitrarily numbered with sequential ascending binary numbers, or locating the binary numbered interval into which the point projects on each axis by performing a search on each axis for the numbered interval, thereby determining rules applicable to the packet for that axis, as is specifically recited in applicant's base claims 1 and 12.

Applicant's invention provides advantages over the prior art in that, a unique contribution of a preferred embodiment of the present invention is in determining the best break points and methods to accomplish the search in the least number of steps.

Applicant therefore believes independent claims 1 and 12, as amended, are patentably distinct over the prior art presented by the Examiner. Dependent claims 2-11, and 13-22 are then patentable on their own merits, or at least as depended from a patentable claim.

Applicant previously argued, regarding applicant's independent claim 23, that applicant has carefully reviewed page 209, col. 2, lines 56-62, and page 203, col. 2, lines 19-25 of Lakshman, and applicant can find no specific teaching or suggestion in either portion cited of simplifying a search comprising the steps of conducting a first search on one or more axes, **and using information from the first search to simplify further searching on remaining axes,** as is recited in applicant's claim 23.

The Examiner responds to the above argument stating that Lakshman process searches one dimension to find the interval I on Pj of some k dimension which is the equivalent of the applicant's conducting a first search on one or more axis. Obviously, the Examiner continues, once the Examiner has conducted the binary search for the initial value for j, the following process is simplified since only j-1 remaining dimensions need to be searched.

Applicant argues that having less area to search does not read on using information from the first search to simplify further searching on remaining axes. In Lakshman it is the act of searching the Examiner relies on to read on applicant's claim 23, not using information from the first search to simplify further searching on remaining axes. The teachings of the referenced portions of Lakshman actually have nothing to do whatsoever

with the limitations of applicant's claim 23. Applicant therefore believes that claim 23 is also clearly patentable over Lakshman.

As all of the claims standing for examination as amended have been shown to be patentable over the art of record, applicant respectfully requests reconsideration and that the present case be passed quickly to issue. If any fees are due beyond fees paid with this amendment, authorization is made to deduct those fees from deposit account 50-0534. If any time extension is needed beyond any extension requested with this amendment, such extension is hereby requested.

Respectfully Submitted,

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by _____

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